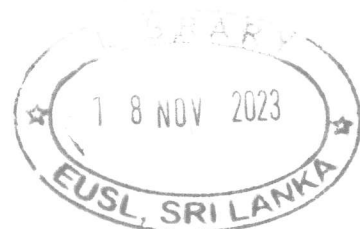


**REVIEW ON IMPACT OF C: N RATIO OF ORGANIC MANURE
ON SOIL NUTRIENTS AVAILABILITY**



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ABSTRACT

The C:N ratio is one of the main characteristics that describe the decomposition and nutrient release pattern of organic sources. It gives an indication of N availability for the process of biological degradation, and the decrease in this ratio with decomposing time has been widely reported as an indicator of decomposition process. The change in C:N reflects the organic matter decomposition and stabilization achieved during composting. Plant residues with high C:N ratio (>40) are mineralized far more slowly than residues with the C: N ratio less than (40). Amendments with low N concentration (high C/N) induce net N immobilization. High quality litter can decompose faster in comparison with low quality litter. N concentration can be a good predictor of decomposition rate in the initial stage of litter decomposition. Organic amendments can be used as nutrient source for plants, but their effect on nutrient availability depends on properties such as C/N ratio and concentration of rapidly and slowly decomposable compounds. Addition of organic materials with high N concentration ($C/N < 20$) results in net N mineralization. Whereas amendments with low N concentration induce net N immobilization. The C:N ratio appears to be a useful parameter to measure when attempting to predict the effects of manure amendments on short-term N availability. Composting is an aerobic and self-heating bioprocess with localized temperature, pH, oxygen, moisture, and nutrient gradients, which create highly heterogeneous microniches of distinctly adapted microbial populations. The yield effect of green manure in soil depends on the amount of N in biomass, its release rate, the C/N ratio in organic matter, soil N content and climate. Mature composts increase SOM much better than fresh and immature composts due to their higher level of stable C. High amount of

OM in compost increased OC in both soil and cultivated soil because of plant cultivation effect and increase of OM degradation in cultivated soil.

Table of Contents

ABSTRACT	i
ACKNOWLEDGEMENT	iii
ABBREVIATION.....	vi
CHAPTER 01	1
1.0. Introduction	1
CHAPTER 02	4
2.0. Literature review	4
2.1. C:N ratio.	4
2.2. Impact of C:N ratio on decomposition	4
2.3. Organic material with high C:N ratio on decomposition	6
2.4. Organic material with low C:N ratio on decomposition	7
2.5. impact of C:N ratio on nutrient release	7
2.6. C: N ratio of different organic compounds	8
2.7. C:N ratio and nutrient availability	11
2.8. Impact of C:N ratio on eco-friendly decomposition.....	17
2.9. Effects of C:N ratio green manure and nitrogen application rate on crop yield	18
2.10. Dynamic composting optimization through C/N ratio variation as a start-up parameter	19
2.11. Impact of composts and other amendments on soil properties.....	20
CHAPTER 03	24

CONCLUSION..... 24

REFERENCE..... 25